

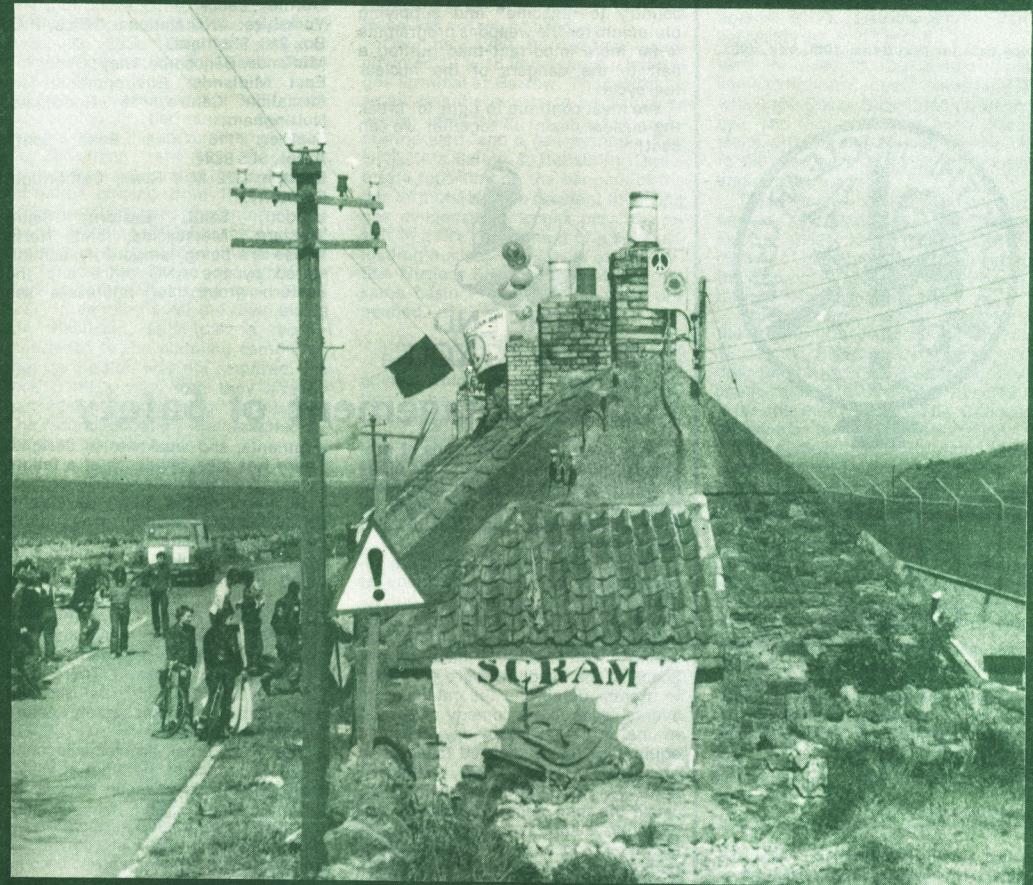
SCRAM

ENERGY BULLETIN



No24

30p



**Action Issue : Torness p8 ; Plogoff p7 ;
Cornwall p4 ; RTZ p10 ; Barrow p3 .**

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Copy date for next issue: 10th July, 1981.



Cover photo: Skateraw Cottages occupied at the end of the Torness week of action.

Credits

This magazine is produced for the British anti-nuclear campaign by the Scottish Campaign to Resist the Atomic Menace, 30 Frederick Street, Edinburgh EH2 2JR. We welcome contributions from anyone on local issues, although we cannot guarantee publication.

ISSN 0140 7340

Printed by Aberdeen Peoples Press, 163 King Street, Aberdeen (0224-29669).

Typesetting by Joy Rice at S.C.P., 30 Grindlay Street, Edinburgh 3. (031-229-3574).

Distribution by Full Time Distribution, 27 Clerkenwell Close, London EC1. (01-251-4976), and by Scottish and Northern Books Distribution Co-op, 47 Niddry Street, Edinburgh 1. (031-557-0133).

Subscriptions - see inside back cover.

Comments

Since the last issue of the **SCRAM Energy Bulletin** Britain has seen actions against almost all the components of the nuclear fuel cycle. Opposition to uranium mining was an integral part of the RTZ week of action.

The sites of future nuclear power stations as far apart as Luxulyan in Cornwall and Torness in East Lothian have been the focus of direct action. And nuclear waste transport is in the process of being opposed by Barrow and District Action Group in the form of a legal action against BNFL.

Despite these actions and recent official reports vindicating what the anti-nuclear movement has been saying for years, there are still no signs of the government reviewing its pro-nuclear policy. It appears that stopping the "miners from holding the country to ransom" and supplying plutonium for the weapons programme is far more important than putting a halt to the dangers of the nuclear fuel cycle.

We must continue to fight to 'break the nuclear chain' — together we can do it!



IN THE END
IT'S UP TO YOU

Mismanagement of Safety

'Poor start, but shows signs of progress. Could achieve much if the effort is maintained.' Thus reads the recent report on the boys at Windscale by their headmaster the Health and Safety Executive.

Around 30 incidents a year are reported from Windscale, as many as from all other nuclear plants put together. So in 1979 the HSE were called upon to find out if something was wrong with safety management. Seven of the incidents were examined in greater detail and the catalogue of events reads like a comedy of errors. In one, a fire caused by oxy-acetylene equipment in a disused separation plant on 4 February 1979, "The incident was made more serious... because the men doing the cutting had difficulty in summoning the works fire service as a locally installed fire alarm had been removed and the single telephone line to the Fire Station was engaged at the time."

The most frequently occurring factor in these incidents was "the inadequacy of, or failure to comply with, various kinds of plant procedure. Other factors included the inadequacy, or failure, of safety equipment or in-

Anti Nuclear Campaign

The Anti-Nuclear Campaign launched its consumer campaign on Tuesday, 5th May in London. The campaign has set up a trust fund along the lines of the NAG campaign (see **SCRAM Energy Bulletin No.22**). Anti-Nuclear consumers will be able to put the nuclear portion of their electricity bills (15%) into accounts for each of the boards.

The following are the regional addresses for the ANC consumer campaign.

North East: 6 Summerhill Terrace, Newcastle.

North West: 24 Chislehurst Ave., Burnley, Lancs.

Yorkshire: ANC National Office, P.O. Box 216, Sheffield.

Midlands: Bencombe, Uley, Glous.

East Midlands: Environmental Information Centre, 15 Goosegate, Nottingham.

Souther: 116 Oliver Road, South Ascot, SL5 9DN.

Eastern: 322 Mill Road, Cambridge, CB1 3NN.

London, South Eastern, South Western, Merseyside, and North Wales are being temporarily administered by the ANC office and the Eastern group: for addresses see above.

struments, and weakness in design." There was also "evidence of a failure to learn from previous experience."

But most of the report devotes itself to saying how BNFL, who inherited a neglected site (in safety terms) when they took over in 1971, are now doing things properly, or in many cases are about to. On this basis of a promise of a better future the HSE sees "no reason ... why the programme for the development of the site should not proceed." There is no hint that BNFL should first sort out its existing problems safely before turning to expansion.

There are other problems looming for BNFL. Much of the plant at Windscale is old and will soon have to be decommissioned. This will "further increase the quantity and variety of waste requiring to be stored on site until routes for their disposal become available." Indeed, "the volume of wastes arising will increase substantially and could eventually require very large and costly effort on disposal."

*'Windscale: The Management of Safety' Health & Safety Executive, London, 1981, £2.50.

Legal Action at Barrow

British Nuclear Fuels Ltd. [BNFL] are being taken to court by the Barrow and District Action Group [BADAG]. The action is over BNFL's development of port facilities at Barrow docks to handle foreign spent nuclear fuel on its way to Windscale. BADAG was formed in January 1980 to fight the importation of foreign nuclear waste through Barrow. Simon Starkie and Terry Smith of the group explain the background to the legal action.

Barrow, situated on the tip of the Furness peninsula in SW Cumbria, is the chief port of entry into the UK for foreign nuclear waste. The port is a series of dock basins, with BNFL presently using a temporary berth in Buccleuch dock. They are however developing a permanent base in Ramsden dock.

The first realisation that BNFL were to develop a permanent base at Barrow came in the summer of 1979. On November 14th 1979 a report, arising from concern at the lack of information coming from BNFL about their intentions, was presented by the town's planning officer to the planning committee. It concluded that planning permission would be required for development of Ramsden dock. However, in January 1980 the town clerk, Mr. Robinson, submitted a recommendation to the planning committee that permission was not required. He took BNFL's view that they already had 'deemed' planning permission. The recommendation was accepted by the town council.

Council Support

Simultaneously, the Political Ecology Research Group published a commissioned report on the Hazards associated with the transport of nuclear fuels. * Its main conclusion was that if a ship caught fire in port, and if that fire could not be controlled, then

there was potential for a disaster equal to that of a major reactor accident.

BADAG has campaigned hard to bring the issue of nuclear waste to public attention. In co-operation with Greenpeace we have carried out a series of direct actions against waste transport boats. It is not unrealistic to say we now have majority support in the town.

Following several months of successful direct actions, our policy changed to one of political persuasion within the town council and among local trade unions and the Labour group. First signs were encouraging, however, underhand dealings of certain councillors were to ensure that the issue was not raised in council.

On June 3 1980, Barrow town council voted 19 to 16 in favour of a natural gas terminal at Barrow. Thus within a small area there were to be a nuclear waste installation, a nuclear submarine yard, and a gas terminal. The UKAEA's Safety & Reliability Directorate reporting on the dangers of the gas terminal said an accident involving gas condensates "could possibly result in a fire engulfment of a ship unloading nuclear fuel flasks at the British Nuclear Fuel's facility within the same basin". The warning went unheeded.

Legal Advice

Early this year BADAG took legal advice which showed the best option to be over a 'declaration order' that planning permission for BNFL's port development is needed. The requirement for planning permission depends on the site's previous history. Is it considered 'operational land', that is land always used for the purpose of shipping of related matters?, or has it ever been considered surplus to the Dock Board's own requirements? The British Transport Docks Board (a statutory body) are the lessors of the



The plaintiffs in the court action against BNFL. Patricia Smith, Patricia McSorley, and Terry Smith.

land in question. But evidence has come to light to suggest it was land for which the Docks Board had no further use, and that there had been discussions with various groups for the site to be used as a marina, for housing and other projects.

Three Barrow residents have been named as plaintiffs in the action against BNFL for a declaration that planning permission is required for their proposed activities which has not here-to-fore been obtained.

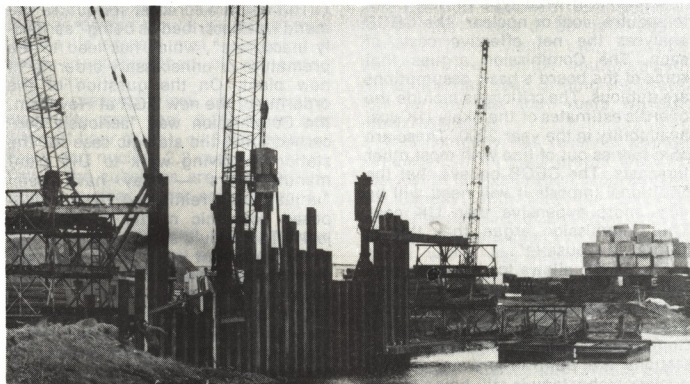
Papers filing a law suit on behalf of the 3 plaintiffs were served on May 13 naming BNFL as defendants. The day before, May 12, Barrow town council after a lively debate voted 23 to 8 for the motion that "The Council's objections to the transportation of spent nuclear fuels through urban areas in general be made known to the responsible authorities and particular objection be made to the continued use of Barrow as the flask handling depot and rail link for the transportation of the fuel to Windscale." One wonders why it has taken them so long to bring the issues to discussion and whether imminent legal action may not have had some small part to play.

*Investigation into the hazards associated with the maritime transport of spent nuclear reactor fuel to the British Isles, and Investigation into the hazards associated with the interaction at Barrow of BNFL, British Gas and Vickers. From PERG, 34 Cowley Road, Oxford.

Appeal

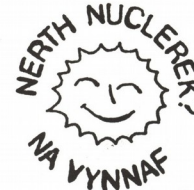
The Law Suit against BNFL will cost around £10,000. A nationwide fund raising campaign has been launched. Please send all donations made payable to BARROW RIGHTS FUND, c/o Secretary, Jean Emery, 29 Longreins Road, Barrow-in-Furness, Cumbria.

Thanks.



Ramsden Dock Development, Barrow.

Home



Seige

For over two weeks a farm in Cornwall was under seige to stop test drilling for a nuclear power station by the Central Electricity Generating Board [CEGB]. The militant actions of the local people has drawn support from people all over Cornwall.

CEGB equipment is being prevented from getting onto the site by 6 feet deep trenches that have been dug in front of the five farm entrances. The one rig that did get onto the site is now standing immobilised with the Cornish flag of St Piran flying proudly from it. Protestors have taken it in turns to chain themselves to the rig.

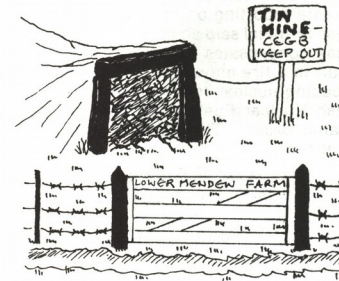
The story began about 15 months ago when the CEGB announced that it was considering three possible locations for a nuclear power station in Cornwall. One of these was a 250 acre site on rich farming land in Luxulyan, south of Bodmin. Rex Searle, who owns the Lower Mendew farm refused to allow the board on his land. The CEGB then applied successfully for a High Court injunction to insist that he should allow drilling rigs on his land to establish the rock strata.

A local survey carried out by the board showed that 92% of the local people are against the nuclear power station. The village is united in its protest with respectable middle-class housewives, farmers, and young villagers all participating in the actions. The village bakery has supplied free pasties, and a land-scape gardener has shut up shop so that he and his assistants can join the picket. The protest is based on the total opposition to nuclear power, and is not a demand to find an alternative site.

A company has been set up to lease the tin mining rights on the farm. It plans to invoke an old Stannery (Cornish parliament) law under which the miners of Cornwall were given the power to reject Westminster legislation in commercial matters. The company believes that it could bring an injunction against the CEGB for interfering with tin mining. The company has begun digging on the farm.

The action finished when the CEGB took out injunctions against 32 local people.

For more information contact Carol Payne, Kings Acre, Luxulyan, Bodmin, Cornwall.



Nuclear Industry Slammed Again!

The nuclear industry has been attacked yet again by another official report. The latest is in the form of the Monopolies Commission's investigation into the Central Electricity Generating Board.

Essentially the Monopolies Commission was answering the question: just how efficient is the CEGB in terms of turnover and capital employed? The Commission generally came to the conclusion that the CEGB is run efficiently, but was severely critical of its nuclear programme.

The report was strongly critical of the investment appraisal which the board has used to justify its nuclear expansion strategy, saying, "A large programme of investment in nuclear power stations, which would greatly increase the capital employed for a given level of output, is proposed on the basis of investment appraisals which are seriously defective and liable to mislead." That is, the investment appraisal carried out by the

CEGB is inadequate to support its contention that new nuclear power stations can be justified on the grounds that they will reduce generating costs.

In deciding what type of new plant to acquire, coal or nuclear, the CEGB analyses the net effective costs of each. The Commission argues that some of the board's basic assumptions are dubious. The criticisms include the board's estimates of the likely UK coal availability in the year 2000. These are 55m tonnes out of line with most other forecasts. The CEGB believe that the additional imports it will need will be 40% more expensive than UK coal. The Commission argue that this is "highly implausible".

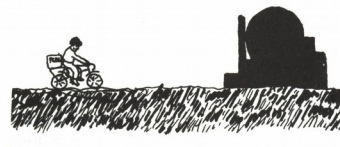
The CEGB allows for the same percentage escalation in construction costs for both coal and nuclear plants. This was considered "unsound" by the Commission because while coal fired stations are built to proven design, nuclear technology is still being developed.

Eco Cyclist

A new report, commissioned by the Ecology Party from the Political Ecology Research Group (PERG), is being publicised by a round-Britain cycle-tour of nuclear power stations. Dennis Nightingale-Smith started his bike ride on May 14th heading towards Berkeley, in Gloucestershire. The report will be officially released when he reaches Windscale.

The report is an assessment of the civil defence implications of commercial nuclear installations in the United Kingdom. It considers both peace and wartime situations. In peacetime the results of a possible accident or sabotage are discussed, while in wartime the results of damage from a nuclear strike or from conventional weapons is considered.

For more information contact Paul Ekins, 01-735-2485.



Monitoring

The Government is to keep a closer watch on leaks of radioactivity from French nuclear power stations along the English Channel. Stations for monitoring airborne radiation will be set up by the National Radiological Protection Board this summer in London, Brighton and the Channel.

Financial Times, 29.4.81

The report also finds that the assumptions about power station performance are "cautious" for coal, while being "perhaps more optimistic" for nuclear.

The board's forecast for future demand was described as being "seriously inaccurate", which has led to the premature or unnecessary ordering of new plant. On the question of the ordering of the new AGR at Heysham, the Commission was "seriously concerned" that the strategic case for the station — giving work to UK plant manufacturers — may have been "unjustifiably reinforced by the supposed economic merits of the project". This should seriously embarrass the Government in its strong commitment to the expansion of the nuclear power programme.

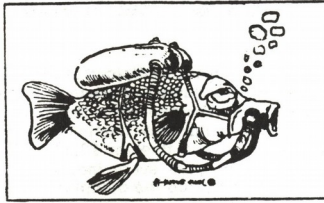
The report gives the impression, though it never is stated explicitly, that the CEGB has been misleading both itself and the public about the true cost of nuclear power relative to coal.

Japanese Accidents

In April it was revealed that a serious accident had occurred at the Tsuruga nuclear power station in Japan last March. Since this disclosure it has been discovered that a number of other serious accidents occurred in January.

In the March incident over 4,000 gallons of primary coolant water overflowed from a storage tank because a pipe valve supplying clean water to the tank was mistakenly left open after a cleaning operation. The leakage continued for three hours before workers at the plant noticed it. 56 workers were exposed to radioactivity, and received an average dose of 10 millirems. A report released by the Ministry of International Trade and Industry (MITI) states that the inadequate design and construction of the storage tank as well as the improper management of the radioactive waste water were the main causes for the leakage, and human errors coupled to make it more serious.

The Nuclear Safety Commission has expressed its dissatisfaction with the MITI report and is conducting a separate investigation. Scientists and anti-nuclear groups believe that a serious accident has been covered up.



The radioactive water leaked into the nearby Urazorby Bay where edible seaweed has been found to have high levels of radioactivity. Local fishermen are demanding that the Japan Atomic Power Corporation, who own the plant, buy the fish that they can no longer sell.

Shortly after the incident was disclosed to the public, six plant executives, including the director, were immediately replaced because of their role in the cover up. Ten days later the MITI announced that it would not approve the resumption of operations at the plant until it has established a new safety control system.

A number of protests have taken place throughout Japan demanding that the company shut down the plant permanently, and make public all the operational records of the plant. On

Abroad

May 7th the local residences' council filed a complaint against Japan Atomic Power Corporation asking the Prosecutors to investigate the company on charges of concealing a series of accidents and other legal violations.

On May 12th the Japan Socialist Party joined one of the country's largest unions in calling for the shut-down of all nuclear power stations in Japan, and seeking a ban on the construction of all new plants until nuclear energy is proven safe. The party is also asking the Japanese government to provide public access to all information concerning nuclear power plants including the details of the Tsuruga accidents.

WISE, 23.4.81 and 14.5.81

And on 22nd May another accident occurred at the Mihama Nuclear Power Station in Western Japan. Three tons of coolant water leaked when a bolt was loosened by mistake. Officials at the plant said that only a small amount of radioactive gas escaped, and that the water was later recovered.

Sunday Times, 24.5.81



Subsidies

In America nuclear power has received almost \$40 billion in federal subsidies over the past 30 years according to an unpublished Department of Energy study.

The study, written by economist Joseph Bowring, said that if the subsidies had been borne by private industry, electricity generated by nuclear power would be more than double its present cost — making it more expensive than oil generated electricity.

The present prices of generating electricity are: coal 2.25 cents per kilowatt hour (Kwh), oil 3.75 cents per Kwh, and nuclear 2.2 cents per Kwh. When the subsidies are included the cost of nuclear power costs up to 4.7 cents per Kwh.

The report says that nuclear power has benefitted from subsidies since its birth from federal aid in five major areas: research and development; promotion of foreign reactor sales; uranium market promotion; fuel enrichment pricing aid and management of waste, mining spoils clean up and unpaid decommissioning costs.

Washington Post 26.12.80

India

The Indian Minister of State for Science and Technology has told the Indian Parliament that India will proceed with a peaceful nuclear explosion if it ever feels the need for such an experiment.



Irish Uranium

The anti-uranium struggle in Ireland has now switched from Donegal to the little village of Borris in south Carlow. There, Maugh Ltd., a subsidiary of the French multinational Minatome has been drilling for uranium for the last four years without much resistance.

This company has received approximately £1m in EEC grants towards the cost of its exploration programme. On Sunday, 10th May the Leinster Anti-Uranium Group arranged an exhibition on the dangers of uranium in Borris, which was attended by many local people in the area.

Most were horrified at the extent of the threat posed to their community, and plans for a local community based anti-uranium group are well advanced.

For more information contact Leinster Anti-Uranium Group, c/o In Dublin, 14 Batchelors Walk, Dublin 1.



Sweden

At the end of April, the local government in Arjeplog in northern Sweden voted by 16 to 15 to accept uranium mining in the area if the federal government approves it in the autumn. Before the vote, an opinion poll, published in the largest morning paper in Sweden, showed that 40% of the local population are opposed to uranium mining, 30% in favour, and 30% undecided. However, local anti-nuclear activists collected 1,300 signatures, representing more than half the local voting population, on a petition opposing the uranium mining. The 'yes' vote by the local government means that efforts will now be directed at the autumn decision by the federal government.

WISE, 30.4.81

Dumping at Sea

Each July the Atomic Energy Authority [AEA] organises a shipload of nuclear waste for dumping in the Atlantic. Last year the matter gained a certain prominence. A train-load of waste en route to the docks at Sharpness, on the Severn near Bristol, was held up for a few hours by anti-nuclear groups. It gained a lot of publicity, and cost those involved a few days in jail and fines of £2,500. The money was collected from a generous public—who gave every indication of supporting both the cause and the action. Attempts to stop the dumping out at sea by the Greenpeace boat 'Rainbow Warrior' in previous years also attracted sympathetic attention, yet the AEA have every intention of carrying out the dumping again this year.

Since 1975 the amount of radioactivity dumped by Britain has more than doubled — yet almost every other country has stopped. Germany in 1967, Italy, Sweden and France in 1969, and the US in 1970. In 1979 Britain contributed a massive 98% of the total radioactivity dumped, but only 37% of the total weight — the other countries shield their waste much more.

The AEA likes to imply that the waste comes from hospitals, industry and other 'acceptable' sources, but this is not so. A 1979 official report* said "the alpha activity is mainly plutonium: with some higher actinides and uranium; and the beta activity, apart from tritium, is mainly fission products and induced activity in steel reactor components", none of which are used in hospitals! Almost all of the plutonium comes from Windscale or from nearby Drigg, where waste from the nuclear weapons programme of the 1950s is stored awaiting dumping. The waste is sent to Harwell, where it joins waste from Aldermaston for packaging in concrete inside steel drums. It is then sent to Sharpness for loading. Other waste is processed and packaged at the Radiochemical Centre in Amersham, Hinkley Point and Trawsfydd power stations, and at Rosyth and Chatham nuclear submarine bases. The waste includes large quantities of sludge from the cooling ponds, from spent fuel rods, and the liquid and air filters which protect the environment around nuclear sites.

International Regulations

There are international controls governing the dumping of waste at sea, principally the London Dumping Convention of 1972. To comply with these regulations the Ministry of Agriculture, Fisheries and Food must ensure that there is:— a detailed 'environmental and ecological assessment' of the dumping areas; a 'justification as against land based alternatives' for the dumping; and 'monitoring of the conditions of the seas'. The dumping should only go ahead if this information gives 'an adequate scientific basis' to assess the consequences of the dumping on marine life.



To date Britain has **not** carried out an environmental assessment: **no** investigation has been carried out about land based alternatives of storage or disposal; **no** monitoring has been done and the scientists are all calling for more information! **There is no clear idea of the long term effects of the dumping.**

All of the recent authoritative reviews of nuclear waste policy have concluded that the largest problem posed at the moment is from intermediate level, and plutonium contaminated, waste. This is exactly what is dumped at sea — the International Atomic Energy Agency defines high level waste as that which may not be dumped at sea, and low level waste is buried on land. Sea dumping is considered the only option for intermediate waste. The industry plans to increase the amount dumped at sea by 30-40 times by the 1990s. To this end BNFL has recently applied for a £100m expansion at Windscale, much of which is to process and package waste for dumping at sea.

Abroad

Abroad the signs are worrying: Japan has recently announced its intention to dump, citing European experience as justification! The move has been strongly resisted by other Pacific nations and environmentalists in Japan. If Britain continues to blatantly flout international controls other countries faced with a similar problem may decide to join in. The US Navy have to withdraw an old Polaris



nuclear submarine each time they introduce a new Trident. Two such submarines were laid up in 1979, but their propulsion reactors present a problem. Land burial is an expensive and unattractive option, so they are seeking permission to dump them in the deep ocean. As more subs are decommissioned, the pressure is going to increase. There is also the possibility of high level waste being buried on or under the sea bed.

Last year, Greenpeace collected signatures for a statement of concern about sea dumping from the general secretaries of 24 trade unions — including nine with members involved at some stage of the sea dumping process, and MPs, scientists and many other prominent people. A trade union group: Preservation and Conservation of Animal and Plant Life (PCAP) this year has the support of eight unions in their attempt to stop sea dumping, and are apparently hoping that Joe Gormley will raise the issue at the next Trade Union Congress.

Future Protests

The Campaign Against Sea Dumping is using as much popular, scientific, legal and parliamentary pressure as possible to have the dumping stopped. They are hoping for various forms of protest, not only at Sharpness itself, but also at the packaging plants at Harwell, Hinkley Point, Trawsfydd, Amersham, Rosyth and Chatham. They are holding a demonstration at Sharpness, with a march from nearby Berkely on Sunday 5th July. This will be followed by films and ceilidh music, to which everyone is invited. They will attempt to arrange camping accommodation for those wishing to continue their protests throughout the week of loading. They need all the support they can get — if Britain can be made to stop, 98% of the problem will be removed.

For more information contact the Campaign Against Sea Dumping, Longacre Hall, London Road, Bath, 0761-33094.

*Review of Command 884; the Control of Radioactive Waste, a report by an 'expert Group' to the Department of the Environment, HMSO, 1979, £1.35. It should be read and criticised as it is going to lead to a new White paper on waste policy.

Victory at Plogoff

In Plogoff, the little village on the beautiful Point du Raz, the villagers are jubilant. The proposed nuclear power station has been cancelled by Mitterrand. This article about the resistance in the village was written before the French Presidential elections, by Gerard O'Mahoney after a visit. Although some of it is now out of date, the lessons of Plogoff are important for campaigners around the world, so we have decided to print it.

Since the original decision back in 1975 to locate one of Europe's largest nuclear power stations at a site just south of the village, opposition has mounted, not only in Plogoff, but throughout Brittany, culminating in a six week battle last year during the 'Public Enquiry'. Many vicious battles took place between the CRS (the riot police) and the heavily armed Gendarmerie Mobile, and the local people, backed up by anti-nuclear supporters from all over Brittany. Plogoff was virtually in revolt.

Today, the black and white horizontal striped Breton flag hangs proudly from the Defence Committee's headquarters in the middle of the village, in an area which is not traditionally nationalistic. Anti-nuclear slogans colour the walls and roads. Farms carry the message "aux centrales nucleaires" on notice boards for miles around the village, every shop, car, cafe, and even the post office has anti-nuclear stickers. A stranger is left with no doubts as to the feelings of the people.

Over 100 sheep are grazing peacefully on the proposed nuclear site. The site itself is now owned and run by a Groupement Foncier Agricole, an agricultural co-operative with many thousands of members.

Broad Based Opposition

The anti-nuclear movement in Brittany is based in local autonomous groups in towns and villages throughout the region. In Brittany, unlike the rest of France, farmers, the unemployed, the young, the nationalists, and the middle class liberals all share a

common base for opposition to nuclear power, even though their tactics vary.

This region's solidarity has worried the French authorities as they push ahead with Europe's most ambitious nuclear plan. They have certainly come out second-best in their confrontation with the Bretons so far. A decade ago an Electricite de France project proposed for Erdeven was defeated by local opposition. At Ploumoguier their plans for a nuclear power station have also come under strong attack, and have been temporarily postponed. After a violent struggle with the tiny community of Le Pellerin in the mid 70s the French authorities were once again defeated by the strong resistance of the local people. The one plant which operates in Brittany is at Brennilis, but this was built 20 years ago when nuclear power was regarded as being the saviour of the future.

LE SOLEIL ME NOURRIT

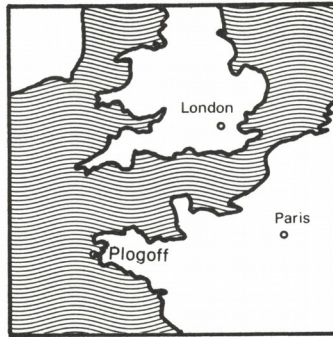


LE NUCLEAIRE NOUS DETRUIT

The Comite de Defence de Plogoff (CDP), the local mass based anti-nuclear group, has a difficult job on its hands in presenting a united front. It is to its credit that it has succeeded so far, although militant critics have argued that much of the resistance during the 'battle of Plogoff' was spontaneous and originated from the despair of the people at the soft attitude of the committee. The CDP has also taken on a mediating role between the local people and the outsiders from the ecological and the more militant groups.

Plogoff is Prepared

Plogoff is constantly prepared for renewed pro-nuclear activity from the state. Every road for miles around is under constant watch, and an early warning system to signal the approach of the state's forces is in operation. However, it would be foolish, despite previous victories, to believe that the people can prevent the police and the military from occupying the site. The



anti-nuclear supporters are thinking more in terms of a long drawn out struggle to wear down the determination of the state.

The French authorities now have two options: either abandon the project completely, or press ahead regardless of the resistance, and smash it with the full force of the state.

The walls of Plogoff carry the slogan 'Nuclear Power-Police State' ... many people in the area know that they will get no mercy from the police or the military should they return. The pressure of resistance and the daily hostility shown last year, caused many of the military disciplined Gendarmerie Mobile to lose their heads completely, and react violently against the anti-nuclear protestors. The television and newspaper pictures of the scenes of violence stunned the country, and caused much embarrassment to President Giscard and his government. Now that Mitterrand has won the Presidential elections it is possible that he will fulfil his promise to cancel the nuclear power station at Plogoff. However he is strongly pro-nuclear, which makes the fulfilment of the promise seem unlikely.

Lesson's Must Be Learnt

The anti-nuclear movement in Plogoff wants to internationalise the opposition, particularly to spread the support to other Celtic nations such as Scotland, Wales and Ireland. The Irish anti-nuclear movement has adopted the idea of local autonomous groups across the entire country to oppose the Carnsore project and uranium exploration. But here and at Torness, occupations have not been as long lasting or as effective as the Plogoff situation, where determination of the local people has been the principle factor in its success. The lessons of Plogoff, Le Pellerin and Erdeven have been hard won: the experience must be translated into positive action in our own countries immediately.



The highly successful Stop Torness week of action saw many varied events, ranging from a conventional style march and rally to direct action.

The week began with street theatre outside the SSEB showrooms in conjunction with the RTZ week of action (see page 10), and a motorcade organised by Parents Against Torness (Haddington). 18 gaily decorated cars, headed by a white elephant named Torness, drove through East Lothian to Whitesands, about a mile from the construction site, where about 60 people took part in a picnic and balloon release. The hundreds of balloons drifted westwards, showing the probable path of contamination following the event of an accident.

Throughout the week of action NAG, the Consumer Campaign group, handed leaflets to SSEB customers outside the showrooms, asking them to withhold the nuclear portion of their electricity bills.

Rally

On Friday, May 15th over 1,000 people joined a march in Edinburgh for a nuclear free Lothian. The Lothian Region Labour Group is holding a special meeting devoted exclusively to discussing the implications of nuclear free zone policy, and what practical steps the Region can take towards implementing it. This is to be followed by the Regional Council considering nuclear free zone policy at its next

meeting. The Council has already refused to co-operate in the so called 'Home Defence' plans. At the rally over 800 people signed a declaration concluding 'we will take all non violent steps necessary to prevent the construction of any nuclear site in the Region or elsewhere'. Many new people have also signed up to withhold the nuclear portion of their electricity bills as part of the consumer campaign.

Women & Children's Action



On May 10th over 300 women and children took part in an extremely powerful event, showing their opposition to nuclear technology, both civil and military. The sombre event was matched by the misty weather. Led by children carrying a coffin and women dressed in black, the march proceeded slowly to the main gates of the Torness construction site. As the coffin was covered with flowers and wreaths, a group of women keened (a muslim ritual of wailing) facing the site, producing a haunting echo. A 40 foot long banner saying 'No More Toys For the Boys' was tied to the main gates — later to be ripped in half by a policeman for no apparent reason. Standing in a circle around the coffin a remembrance was read, mourning all those who have died as a result of nuclear technology.

The ceremony finished with a declaration of their intention to stop nuclear power.



STOP TORNESS

Week of



Blockade



Saturday saw over 300 people meeting 40 cyclists from Edinburgh at the main gates of Torness. The gates and the old A1 were blockaded.

Occupation

On the wet, cold afternoon of **Saturday, 16th May**, after the Rally at the Torness main gates, about 150 people occupied a row of empty cottages — owned by the S.S.E.B. — on the Skateraw Road. This road runs down the west side of the Torness site, from the old A1 to Skateraw Bay. The perimeter fence runs directly behind the cottages. Originally six cottages, they had been converted into 3 units, each with 4 or 5 rooms. Although they had been empty for several years, they were weather-proof, and the top one was totally free of damp.

Almost immediately, after fires had been lit, work started on clearing them out, and moving in sleeping bags, food etc. About 60 people stayed in them that first night. From the outset the idea was to refurbish them, with one cottage as a living space, one as an information centre on non-nuclear energy options, and one as a workshop for various small-scale

Action

renewable energy devices — the whole forming an alternative or "soft" energy centre. In its day-to-day running it would attempt to put into practice all the non-nuclear ideals of conservation, rational use of resources, and renewable energy.

Sunday, 17th May was a beautiful sunny day, and people worked hard continuing to clear out the cottages, collecting wood (adding to the woodpile given by a neighbour), digging up the strip of garden in front, and generally assessing what would need doing in the long term. Another activity was painting slogans, symbols and designs all over the outside walls. This had already started on the Saturday, with the names of the cottages painted over the doors, such as 'Nuke View' and "Full Moon Cottage" - Full Moon Cottage was in memory of the derelict Half Moon Cottage that was in the process of being renovated by anti nuclear people, when the S.S.-E.B. demolished it just before site work started on Torness in November 1978.



A Smiling Sun Shop was set up in the middle cottage, along with the SCRAM exhibition on Conservation, Coal and C.H.P. All Sunday there was a constant stream of press and visitors. The overall transformation since the previous day was astounding!

Monday, 18th May was a bit quieter, with about 20 people left. A small core of people intended staying indefinitely to make the cottage their home and to see the project through. Many more were committed to giving ongoing support in whatever way they could. Many more were committed to ongoing support in whatever way they could. Energy and enthusiasm was high.

It was early Monday evening when SSEB officials arrived with an eviction order. Several police vans hovered in the background. At this time there were about 10 occupiers. As soon as they had left the cottages, four McAlpine's men started to carry furniture out onto the road. They also made a hole in the roof of the top cottage. This went on all evening, watched by about 20 police women and men, and



under the glare of the temporary search-light that had been erected above the cottage behind the fence. As each cottage was cleared, it was securely boarded up.

Most of those evicted went to Dunbar to the house of one of the occupiers. Two stayed behind in the caravan, which was parked opposite the cottages. Four policemen also stayed behind.



Tuesday, 19th May at 4.30 in the morning the cottages were bulldozed to a heap of rubble. Later that day 5



people were arrested on charges of malicious mischief and breach of the peace: not from McAlpine's or the SSEB who were guilty of this charge, but from Students Against Nuclear Energy and Youth CND. They had snipped some barbed wire and were sitting on top of the fence behind the rubble to draw attention to the devastation in front of them.

The pointless destruction of a fine group of cottages caused a lot of anger amongst the occupiers and local people as one SSEB official found out when he was almost hauled out of his car by a very angry neighbouring farmer.

Later that day the SCRAM caravan was towed to beside the Torness main gate, and parked on Council ground, where it will stay for at least a week provisionally, receiving visitors and press, and displaying photographs and

newspaper cuttings of the occupation. A vigil was also started, at the Torness gates.

On Thursday, 21st another habitable cottage belonging to the SSEB was flattened. This was at the bottom of the Skateraw Road, by the sea.



Continuing Project

The vigil at Torness is now a continuing project, along with the caravan exhibition at the side of the A1. Both have had a powerful impact on passing motorists, workers and local people. The group aim to build up more contact with local people generally.

Better communication with the Torness workforce is being built up by the people on the vigil. Initially the workers were hostile, but the difference in just a few days was incredible. They have been buying leaflets, T-shirts, etc., and giving occasional cans of beer etc., and moral support.

Information is being gathered about work on site and the surrounding area. A list of sub contractors delivering material is being compiled, along with a list of materials going in.

The workforce are having great difficulty removing the 60 cubic-metres of faulty concrete out of the reactor core foundations. A dynamite blast is happening daily, and it is possible that this might weaken or crack the concrete that is not faulty. Rumour has it that this cement mix mistake may cost up to £1-£2 million to fix.

Although the Skateraw cottages have been destroyed, the idea of an Alternative Energy Centre is still very much alive. The core group is committed to staying around, and hope to find suitable legal property in the area for this centre, which will contribute to the local community.

Apart from money and moral support, which will be needed, and the property itself, there will be a particular need for people with practical skills, especially who have experience in the field of renewable energy technologies. Anyone who can help in any way, or who would like more information, please contact STOP TORNESS, c/o Smiling Sun, 37 West Nicolson Street, Edinburgh. 031-667-6203.

RTZ Week of Action

The British based multi-national Rio Tinto Zinc [RTZ] was the focus of actions throughout Britain during the first week of May. RTZ is one of the worst offenders for manipulation, exploitation and oppression of indigenous peoples throughout the world. This was the theme taken up at public meetings around the country addressed by representatives of affected communities in Australia and Canada. The Week of Action ended in London with Public Hearings on RTZ organised by PARTIZANS.

Mining Exploits

Imaginative actions took place in many towns around Britain. In Edinburgh the South of Scotland Electricity Board received a letter from RTZ reporting a uranium find under the SSEB's showrooms. Representatives of RTZ then proceeded to erect a drilling rig outside the showrooms (see photo). The action linked the operations of RTZ to the SSEB's construction of a nuclear power station at Torness. RTZ supplies uranium for the SSEB's nuclear programme, half of which comes from illegally occupied Namibia.

Another mining exploit was carried out in London. The Stinko Mining Co. staked out a new claim on its ever ambitious search for uranium. The new find was below the front steps of a lesser-known rival mining company, Rio Tinto Zinc. So as not to alert RTZ to the fact they were sitting on a 'gold mine', a brass band played to cover the sound of the drilling. An unconfirmed report later suggested that the uranium is in fact situated directly under the building rather than in front of it, which could necessitate its complete demolition!

In Newcastle a bulldozer was used to demolish a makeshift hut to graphically symbolise the treatment RTZ metes out to indigenous peoples. Church grounds were used to illustrate the sacredness of the exploited peoples' land. The week of action closed in London with workshops on different aspects of RTZ's activities, films and a Tribunal.

Tribunal

The Tribunal heard testimony from Australian Aborigines, Bolivian Indians, the Inuit of Canada and others from areas affected by RTZ's investments. This was the first time a British multi-national corporation has been subjected to a methodical examination by its victims and potential victims before a jury. The jury was made up of people from institutions with shareholdings in RTZ, such as a councillor from the Greater London Council (GLC), a lecturer from Kent University, and a doctor from Guy's Hospital, London. Shareholders had been sent an open letter inviting them to attend.

Sir Antony Tuke, chairperson of RTZ, was also invited to attend, but

declined claiming his company "... is always ready to listen to and discuss genuine concerns and problems with its critics in an atmosphere of mutual respect in the presence of truly independent observers". Tuke claimed such conditions were not likely to prevail at the Tribunal, and that it was "... organised without regard to the true principles of British justice".

For many participants it must have been the first time they had appreciated the crucial role of RTZ in propping up the nuclear state and stealing indigenous peoples' land. Time and again the 'uranium link' between civil and military nuclear power was remarked upon. There were many allusions to the striking similarities between RTZ's operations in different parts of the world. In the words of Charlie Rossi, vice-chairperson of the GLC "It seems to me, that wherever this RTZ operates it does the same thing".

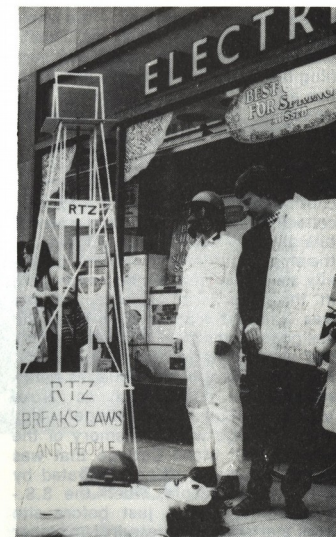
Charities

A number of charitable groups with shares in RTZ were reported at the Tribunal to have announced that they would sell them, following approaches made on behalf of PARTIZANS. They are the NSPCC, the Salvation Army, National Children's Homes, and the Bahai religious group.

In Scotland local authorities and churches are being asked to review their policy of holding RTZ shares. Edinburgh District Council, Central and Fife Regional Councils, the trustees of the Scottish Episcopal Fund and the National Trust of Scotland are among those who own shares. A positive response has already been received from a number of bodies. In London the GLC are taking steps to divest its 370,000 shares. These actions could be a major blow to the public stature of RTZ. They are clearly worried as full page adverts appeared during the Week of Action extolling the virtues of RTZ!

AGM

Three weeks after the week of action, the annual meeting of RTZ became the scene for more protests against the corporation's overseas operations. Angry shareholders shouted down Sir Anthony Tuke, and the directors were questioned about their activities in Namibia, Australia and Panama. The meeting came to a halt when one shareholder, who had not previously been involved in the campaign, stormed out yelling at Sir An-



thony that he now intended to sell all his RTZ shares because of the information that had come to light. Another shareholder called out that the object of the annual meeting was to rubber-stamp decisions which had already been made: "You are sucking the goodness out of the land and spitting it into people's faces" he shouted. And another shareholder claimed that he had never seen such a display of lies and obfuscation by company directors.

Shareholders

A list of RTZ shareholders is available from SCRAM, 30 Frederick Street, Edinburgh, or from PARTIZANS, 218 Liverpool Road, London N1. The Week of Action has left PARTIZANS with debts of over £3,000. Please send contributions to the address above.

PARTIZANS has films and a tape/slide set available. 'Strangers in Our Land' and 'Dirt Cheap' are about Australia and the effects of mining on the aborigines. The film 'Sacrifice Area' was made last summer around the Survival Gathering in the Black Hills, USA, at which the Week of Action was called. It deals with plans of energy corporations and the US Government to turn the Mid-West into a 'national sacrifice area'. Unfortunately £500 is needed to make it available in Britain. The tape/slide set also deals with the Survival Gathering.

For further details contact PARTIZANS, 218 Liverpool Road, London N1.

Sizewell

The deadline for objections to the proposed PWR at Sizewell has been extended to July 4th. About 600 letters had been received by the middle of May, but the East Anglian Alliance Against Nuclear Power hope that this figure will be doubled before July 4th. They are urging more groups and individuals to write in before the deadline, so if you haven't got round to it yet, write now. Letters from other areas are vital because they place the Sizewell proposal in the context of the current nuclear power programme, as well as indicating to Suffolk Councillors the strength of opposition elsewhere.

The reason for the extension is two-fold. Firstly, to allow local people to discuss the proposal with any new

councillors voted in at the recent county elections, and secondly, to allow further comments following a seminar which the county council organised on June 10th. This seminar covered only the issues of environmental impact and safety — omitting the question of need, despite the fact that this issue dominated discussions at the public meetings. The event was not open to the public, but to invited groups only.

The alliance are now concentrating all their efforts towards ensuring that the problems of nuclear power are understood by those who will vote on the proposal — which is where you can help them by writing your objection. The next step is to decide whether to participate in the Public Inquiry. The alliance have generally agreed that it should not unless they receive proper funding. Norman Lamont has stated that there are no plans for such funding, but they have support from some

unexpected quarters, notably from Justice Parker, the Windscale Inquiry Reporter, has said that money must be made available.

The first 2,500 signatures of a local petition have been handed in, and more are being collected. The Anti-Nuclear Campaign are organising a national petition which will be handed in at the Public Inquiry in 1982.



Letters of objection should be written to the District Planning Officer, Suffolk Coastal District Council, Melton Hill, Woodbridge, Suffolk, with a copy to the Secretary of State for Energy, Electricity Division, Thames House South, Millbank, London SW1 4QJ.

Advertisement

You Too Can Advertise in the SCRAM Energy Bulletin. Advertising rates are:-

- 1 page £70
- ½ page £40
- ¼ page £25

SCRAM, 30 Frederick Street, Edinburgh EH2 2JR.

NORTHUMBRIAN ENERGY WORKSHOP has experience with all aspects of wind power. We have been working together as a co-operative for many years, printing, and distributing information providing the alternatives at exhibitions and demonstrations, researching the new and evaluating more traditional

wind turbines and water pumps measuring the wind, designing improved anemometry and data loggers, supplying and installing individually tailored wind energy systems. It is important to us that our activities help to create a viable, socially and technologically appropriate environment.

Our services are available at reasonable rates. Contact us at: Dept S1, Northumbrian Energy Workshop Ltd, Tanners Yard, Gillesgate, Hexham (Tel 604809), Northumberland.

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|---|---|
| <p>★ ENERGY CONSULTANCY</p> <ul style="list-style-type: none"> ☆ Specialist studies on uses of renewable energy. <p>★ WIND POWER</p> <ul style="list-style-type: none"> ☆ Stockists of Winco, Sparco, and Dwyer equipment. ☆ Supply and installation of machines up to 10kW. ☆ Specialist manufacture of components, eg towers, masts, blades, etc. | <p>★ INTERMEDIATE TECHNOLOGY DESIGN</p> <ul style="list-style-type: none"> ☆ Consultancy and design service on general small-scale equipment <p>★ GENERAL FACILITIES</p> <ul style="list-style-type: none"> ☆ Welding, cutting, turning, and metal bending. <p>★ GRAPHIC SERVICES</p> <ul style="list-style-type: none"> ☆ High quality graphic design for posters, leaflets, badges etc. |
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DOGS OF WAR?

Canada has embarked on research to help NATO troops last a bit longer in Nuclear Fall-Out Zones. Three years of tests will, they hope, provide an antidote to the vomiting soldiers are likely to experience as they advance into areas blasted by nuclear weapons.

To attain this magic formula which will strengthen the strings on the kamikaze puppets, the boffins will subject beagles to high levels of radiation.

Why beagles? Well as far as we know beagles have not attained nuclear weapons status. Nor have they been leaking secrets to the other side or even to our own side.

The reason beagles are to be burned is because they walk on four legs, do not vote and have no voice with which to protest.

It's enough to make you throw-up. WHY NOT SPEAK UP INSTEAD!!!!

Animals cannot Protest and Survive; WE have to do it for them.

John Robins is our organiser. Get in touch with him NOW!!!!

SCOTTISH ANTI-VIVISECTION SOCIETY
121 West Regent Street, Glasgow G2 2SD
Tel. 041-221 2300

Please send me more information ☐
I would like to join the S.A.V.S. as a:
Life member £20 ☐ Member £2 ☐
Youth member (under eighteen's) £1 ☐
I enclose a donation of £..... ☐

NAME:..... Phone No:.....
Address:.....
.....

Please use block capitals.

Heat Pumps



Appropriate

Heat pumps are an important component of a non-nuclear future. By converting low grade heat to high grade heat they offer considerable potential for saving energy. But despite the third report of the Select Committee on Science and Technology, on the development of alternative sources of energy recommending in 1977 that "... government should encourage the development of suitable heat pumps", successive governments have shown a distinct lack of interest.

Old Idea

But heat pumps are not new. The concept originated in 1852 when W. Thomson (Lord Kelvin) wrote a paper proposing the "Thermodynamic Heating of Buildings". The idea was not developed during his lifetime, in fact, it has only been since the second world war that serious development of heat pumps has taken place.

Following the successful use of a heat pump for space heating installed in 1947 in the Norwich offices of the Eastern Electricity Board, the Electrical Research Association was officially funded to research heat pumps. The Electrical Research Association were keen enough on the idea to install its own heat pump to provide space heating in its laboratories. A more ambitious system was installed in the Royal Festival Hall, London. Unfortunately, the heap pump, which extracted low grade heat from the River Thames, supplied too much heat due to an over estimate of the heat losses from the building. The heat pump system was replaced by a conventional boiler. In 1954, Nuffield College, Oxford commissioned a sophisticated system using the local sewers as a source of low grade heat.

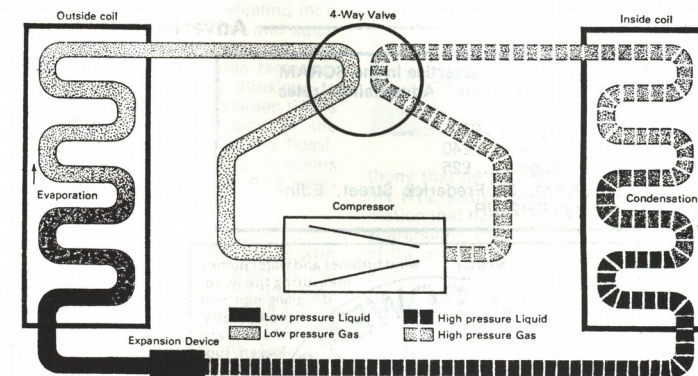
However, with the advent of a seemingly endless source of cheap fuel during the 1960s interest in heat pumps declined. No one wanted to pay the high initial cost of installing a heating system that saved fuel. The result was that firms marketing heat pumps went out of business and the Electrical Research Association's heat pump team broke up.

What is a Heat Pump?

So what is a heat pump? Basically the principle is the same as a refrigerator. The heat pump takes low temperature heat from outside and this is transformed into high temperature heat for inside. This thermodynamic trick is accomplished by one of two systems: the vapour compression system, and the vapour absorption system.

The most commonly used is the vapour compression system. Circulating throughout the heat pump is a refrigerant fluid. When compressed its temperature rises, and as a hot compressed vapour it flows through a heat exchanger. Here the vapour condenses to a liquid, and releases its latent heat to warm the air inside a room. The refrigerant fluid then

passes through an expansion valve that causes a drop in pressure, so that the fluid partly vapourises before it enters a second heat exchanger in the outside environment. So long as the temperature in this environment — whether it is air, soil or water, is higher than the refrigerated fluid, the latter picks up the heat. The fluid then returns to the compressor, where the cycle is repeated.



The absorption cycle heat pump is essentially the same, except a fuel such as gas is burnt to heat the refrigerant fluid and turn it into a hot, high pressure gas, replacing the need for a compressor.

Efficiency

The efficiency of a heat pump can be defined by the ratio of the heat produced to the amount of energy put in, for example, if 1KW of electricity is used to drive the heat pump, and 3KW of heat is produced, there is an efficiency of 3. However, it is not as simple as that. The efficiency of heat pumps is dependent on the temperature difference inside and outside. This means that with an outside temperature of 10°C, the heat pump will be more efficient than when the outside temperature is -10°C. Vapour compression heat pumps tend to average throughout the year an efficiency of 3, while absorption cycle heat pumps average about 1.5. However these figures can be misleading as electricity is normally used to drive the compression cycle. As electricity is generated at about 30% overall effi-

ciency, this type of heat pump is only 90% efficient in terms of primary energy consumption. On the other hand, a gas driven absorption heat pump, assuming an efficiency of 80%, a typical figure for modern gas appliances, is 120% efficient.

Icing-up

The major disadvantage with air-to-air systems is the icing up of the evaporator. This can occur when outside temperatures are below 0°C, due to the high relative humidity in this country. It can be overcome by reversing the cycle for a few minutes every hour, or by installing a heater to melt the ice. But doing so reduces the energy savings.

Water-to-air, and soil-to-air systems don't usually have this problem as water and soil below one and a half metres, rarely fall below 5°C, even in winter.

Pre-Heating

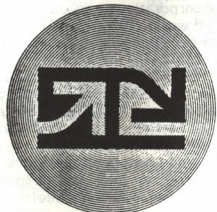
Although air ducted systems are generally more efficient than hot water radiator systems, the latter come into their own when coupled with a pre-heating system. For example, a water-to-water system can use pre-heated water either from a solar collector or by utilising the waste hot water from sinks etc. However the latter system can only be fitted easily into new dwellings. Pre-heating the water makes the heat pump more efficient as the temperature difference is lowered.

Watchdog

Recently there have been promising signs of interest from the establishment. The Electricity Council has just set up the Heat Pump and Air Conditioning Bureau — a watchdog to ensure that the heat pump market in Britain is not undermined by poor pro-

Technology

ducts. The new advisory bureau has a remit to give unbiased advice on all heat pumps including gas heat pumps. We must wait and see whether this Bureau can act independently to the interests of the Electricity Council.



The symbol for the new Heat Pump and Air Conditioning Bureau.

Exhibition

Lothian Region are to give £10,000 towards an energy conservation exhibition in Edinburgh during the autumn 1982. They are also to join the Lothian Energy Group who are organising it.

The exhibition aims at increasing public understanding of the energy crisis, publicising alternative energy sources, and heightening interest in the efficient use of energy. The group hope that the exhibition will stimulate the growth of energy advice centres throughout Scotland.

The South of Scotland Electricity Board, while being happy to give talks on their nuclear policy refuse to enter public debate. When a group of students at Stirling University politely asked them to take part in a debate on nuclear power, they refused. They would send someone along to simply state their policy, but not to enter any discussion.

Fuel From Waste

The Glasgow Council is investigating a scheme which could provide 80,000 tons of useful fuel by recycling the city's refuse. Paper and plastic waste would be turned into fuel pellets, and burnt in a converted boiler. Glasgow is among the leading authorities in waste reclamation, and council officials estimate the city will earn around £300,000 this year by reclaiming glass, paper, cardboard and ferrous metals from the 240,000 tons of refuse they collect every year.

Newcastle is already running a pilot scheme to use waste for fuel. There have been a few problems connected with the moisture content of the fuel pellets, but it is hoped that these will be solved soon. The Glasgow project will initially use pellets bought from Newcastle, but it is hoped that they will manufacture their own after a short time.

Glasgow officials believe that about 30% of the city's refuse could be converted into fuel, and over £50,000 a year saved by burning a mixture of coal and pellets.

Scotsman, 8.4.81

Don't waste it



Sun Power

Japanese scientists have produced a new stable chemical compound which will store energy from the sun for more than two months. The scientists claim that this is the first compound to be made that is capable of strong solar energy at normal room temperatures for prolonged periods. It might eliminate the need for cumbersome solar storage batteries.

The compound does not store energy from the sunshine in the form of heat or electric power. When exposed to sunshine the compound changes its molecular structure. To release energy from the compound a catalyst reverts the compound back to its original chemical structure.

Scotsman, 27.3.8

Totem

A new combined heat and power system for domestic use has been developed at the Open University. Totem (total energy module) is based on a Fiat 127 car engine that is run on gas instead of petrol. The engine has been modified to provide simultaneously home heat, via piped hot water, and electrical power. Surplus power can be fed into the grid under microprocessor control.

The system has an overall efficiency of about 89%. A conventional gas central heating system has an efficiency of about 65% which is the same as Totem's. But Totem also produces electricity at about 24% efficiency, thus giving the overall 89%.

The system can also be run on natural and manufactured gas, butane, propane, biogas, charcoal gas, and alcohol.

While costing an average £260 more than gas boiler heating to install in a new home, Totem could save about £40 a year in gas bills and generate electricity at a cheap 2p per kilowatt-hour.

Scotsman, 21.5.81

Wave Energy

It is thought that wave power research funding by the Department of Energy will be cut early next year. At the moment the Department funds four projects: Lancaster's Flexible Bag, Bristol's oscillating cylinder, and the National Engineering Laboratory's and Queen's University's projects which are both based on the oscillating water column principle.

Guardian, 14.5.81

The Government's plan appears to be the destruction of wave power, followed by a show of goodwill towards wind power, and then a decision that aero-generators are really

suitable only for use on a small scale in isolated hamlets — and then the conclusion that we must go full speed ahead to a nuclear economy.

Two objections have been raised to the wave power programme. First it was that the technical problems were insoluble, and now it is the cost. But in the time that the Government has

been monitoring wave powered electricity the prices have come tumbling down while everything else — particularly energy — has risen rapidly. The following table shows the cost of one kilowatt-hour from the various wave power systems, and how these costs have gone down over the last three years.

	1978	1979	1980-81
Salter's Duck	20 - 40p	10p	4.5-5.6p
Cockeraill Raft	20 - 40p	12p	9p
Oscillating Water Column	20 - 40p	13p	6-11p
Lancaster Airbag	5 - 10p	6p	3.5-4.7p
Bristol Cylinder	---	14p	5 - 10p
Belfast Buoy	---	12p	8p
Lanchester Clam	---	6p	4-4.5p

The decrease in the cost of generating one kilowatt-hour for different wave power systems over the past three years.

Book Reviews



Nuclear Resisters

Nuclear Resisters, Feminists Against Nuclear Power, 1981, 80p [+ 20p P&P from SCRAM mail order].

This pamphlet gives six women's accounts of why and how they became involved in the anti-nuclear movement. Each of them looks at a different aspect of the nuclear industry — an area which she has studied in depth.

I like the way that each chapter is self-contained. The language is clear and makes definite attempts to be unmythifying. Complex subjects e.g. radiation (Connie) are explained carefully. I guess its just apparent throughout that this book was written by women for women. Each chapter is well referenced.

My only criticisms are of the production. Some of the graphics are quite untidy. I think that more time and thought could have been put into the overall layout of the book.

I was very impressed by the content; for 80p it's really good value for money — easy to read, interesting, informative — Buy it!

Marion Levitt

War & Nuclear Power

The Destruction of Nuclear Energy Facilities in War, Bennett Ramberg, Lexington Books, 1981, £12.50

War and nuclear power in one volume, what more could we want? But when the cases against war and nuclear power are quite strong enough in their own rights, why go to great effort to predict what could happen if the two were mixed?

In fact, this book raises some rather important questions, especially in the context of campaigning for nuclear free zones. A little evidence of the way nuclear power is included in military plans was provided by the selection of Dounreay, Windscale and Dungeness as targets in last Autumn's Square leg exercise.

The middle section of the book gives pointers to the nature of that particular civil-military connection. It reads like a briefing for Pentagon targetting policy, discussing the military potential of nuclear

power stations as radiation sources for "area denial" and their place in the attempted construction of "balances of terror". It doesn't beat about the bush talking about the risk from freelance terrorists; it looks a lot like a policy proposal to state terrorists.

And it could indeed be just that. Lexington Books are known to publish policy and background material originating from the CIA. This isn't to say that Ramberg is some kind of "spook".

Indeed, the rest of the book is quite different. The first two chapters give a brief and well-written guide to radiation health effects. Ramberg looks in some detail at the possible effects of "conventional" explosive attacks, drawing on material predicting the effects of non-military accidents. The most useful of this comes from the very detailed work of Jan Beyea on the effects of accidents at Jamesport, Long Island (USA), Barseback (Sweden) and the proposed Gorleben waste dump in Germany. Gorleben just happens to sit right on the Iron Curtain in the path of those fabled Russian tanks...

The final chapter proposes at length an international treaty against attack on nuclear power installations. It states almost without comment cases for civil defence (inherently unconvincing) and for "soft energy paths". Ramberg seems to have been at pains not to associate himself with these, but a distinctly sympathetic tone comes through.

However puzzling this book may be, I'm going to find it extremely useful. Despite its price, anyone with an interest in any detailed study of nuclear weapons, nuclear power, or the links between the two, should get access to a copy.

Mike Holdenness

NUCLEAR LINKS

THE CHAIN-REACTION OF ENERGY ARMS AND UNDERDEVELOPMENT

Nuclear Links: The Chain Reaction of Energy, Arms and Underdevelopment; Students Against Nuclear Energy & Third World First, 1981, 50p. [+ 20p P&P SCRAM Mail Order].

This pamphlet extends the nuclear debate to the 3rd world, explaining the political and economic forces impelling the world into dependence upon nuclear technology. The 3rd world arms race and nuclear power programme are exposed as mechanisms of control, which enable western governments and 3rd world regimes to continue the exploitation of 3rd world people.

The equation of technology with development is shown to lead to misappropriate use of resources and the acceleration rather than elimination of inequality.

Although it focusses on this in the 3rd world, it is shown to be a global strategy maintaining the status quo of elitism. 3rd World exploitation is paralleled and made possible by systems operative in the developed world.

The pamphlet is divided into sections dealing with traditional 3rd world energy sources and usage; the 'oil dilemma'; the nuclear fuel cycle; economic and political arguments and the connections between energy and arms. Clear explanations are given of the operations of transnational corporations and business finance in the 3rd world. The political forces which encourage repressive regimes by use of nuclear technology are outlined.

This format presents a well balanced structure of fact and argument. Sources are well documented with bibliographies after each section. The text is attractively broken up with a series of photographs. Diagrams and tabulated statistics provide a good back up to a well argued text. Tables are provided with useful information such as world energy consumption, government resources and spending, and the nuclear reactor and weapons capability. The pamphlet finishes with a synopsis of relevant campaigns and their contacts — a good idea since too many books provide information without the opportunity to follow up involvement.

It is a well researched pamphlet which sustains a developed argument with the facts to back it up.

Claire Simpson

Rigged Debate

Nuclear Power - The Rigged Debate, British Society for Social Responsibility in Science, 1980, 60p. available from BSSRS, 9 Poland Street, London WC1.

This pamphlet grew out of a feeling that there is something missing from the nuclear debate. That as anti-nuclear campaigners 'win' one round of arguments, the justification for nuclear power changes to another technological or economic issue. Thus the real reason for continuing nuclear power; that the stability of Western Capitalism is dependent upon the control of energy sources, is hidden behind such myths as the 'energy gap'. The real reasoning behind the expanding nuclear industry is revealed in the leaked cabinet minutes, from which the authors quote '... a nuclear programme would have the advantage of removing a substantial proportion of electricity production from the dangers of disruption by industrial action by coal miners or transport workers'.

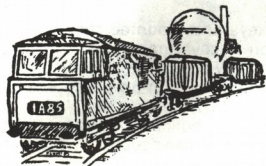
The authors suggest that unless the real reasons for nuclear power become part of the nuclear debate, we will possibly find ourselves in the situation of having defeated nuclear power but still be living in a society with massive unemployment, alienating work and centralised energy in the hands of what used to be the oil multinationals.

This pamphlet is not a coherent analysis, and indeed the authors admit to this in the introduction, but it is certainly provocative. Some idea of the perspective of the pamphlet can be gained from the quote from Marx inside the front cover. 'It would be possible to write a history of the inventions made since 1830 for the sole purpose of supplying capital with weapons against the revolt of the working class'.

Claire Holman

Don't Take the A-Train

DON'T



**TAKE THE
A-TRAIN**

A Critical Examination of Nuclear Waste Transport

Don't Take the A-Train — a critical examination of nuclear waste transport, is a new publication from SCRAM. Written by Ian Welsh of Lancaster Half-Life, it was produced with financial assistance from the ANC. The pamphlet describes in straight forward English what nuclear waste is, how it is transported, and the possible consequences of an accident.

Nuclear waste transport can be an important basis for local based campaigns throughout the country, as many areas far from nuclear power stations are affected. The pamphlet provides the necessary technical background for any such campaign, with good use of official sources of information.

Many local anti-nuclear groups are already working on this issue. Groups and individuals who have not already done so, are urged to get their MPs to sign the Early Day Motion (number 16)

on nuclear waste transport before the end of July. This House call on the Government to establish a public enquiry into the safety aspects of the transport of nuclear waste products within the United Kingdom. For more information contact LRWTC, c/o 15 Klea Avenue, London SW4.

In Tyneside local councillors are being lobbied about the dangers of nuclear waste transport. And in Doncaster the local Friends of the Earth group has been distributing leaflets on the issue while pushing a drum of 'nuclear waste' round the town centre. Now that Labour are controlling the GLC it seems likely that London will declare itself a nuclear free zone, and possibly that nuclear waste will be rerouted around London.

Don't Take the A-Train is available from SCRAM, 30 Frederick Street, Edinburgh EH2 2JR, 60p plus 15p P&P.

Index

Brian Rome has produced an index to the Select Committee on Energy report. It is available from ANC, P.O. Box 216, Sheffield, or SCRAM, 30 Frederick Street, Edinburgh EH2 2JR. For the cost of photocopying it and posting it (about £2 - its 34 pages long).



**SUBSCRIBE TO
THIS MAGAZINE**

Subscriptions to this magazine cost only £4 a year for six issues. If you join SCRAM, membership costs £6 a year which entitles you to a copy of the Energy Bulletin every two months and a member's newsletter twice a year.

We are always short of money, but more so now, since the Tormess week of action, so we must stress that these are minimum subscription rates. If you are able/willing to give more, your donations will be gratefully received. The standing order form below is for those of you who can afford a regular donation by bankers order. We need the financial certainty of regular donations to survive.

Please be generous.

Worried About the Front?

The Smiling Sun shop is appealing for money to help cover the costs of recent damage to stock. The shop suffered from an uncalled for attack during the night — a brick was thrown through the window and books, leaflets etc., covered with red paint by two members of the British Army. Please send any donations to the **Smiling Sun, 37 West Nicholson Street, Edinburgh 8.**

Apology

Ecoropa are to continue producing their excellent leaflets 'Nuclear Power — the facts they don't want you to know' and 'Radiation — the facts they don't want you to know'. They have just reprinted them in large quantities, and are not ceasing to publish them, are reported in the last issue of the SCRAM Energy Bulletin. Our apologies to Ecoropa for this mistake. The leaflets cost £3.00 for 100, or £21.50 per 1,000, available from **Ecoropa, P.O. Box 11, Godalming, Surrey.**

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Signed.....Date.....

Diary

19-21st June: Glastonbury Mid-summer Music Festival in aid of CND. Tickets cost £8 plus SAE, under 14s get in free. Performers will include Aswad, John Cooper Clark, Judie Tzuke, Donovan, Hawkwind, Ginger Baker, Taj Mahal, New Orders and others. For more details contact CND, 11 Goodwin Street, London N4.

4th July: Closing date for Sizewell Objections. Write to the Planning Officer, Suffolk Coast District Council, Melton Hill, Woodbridge, Suffolk, and send a copy to Secretary of State for Energy, Thames House South, Millbank, London SW1P 4QJ.

5th July: Campaign against sea dumping demo at Sharpness, followed by a ceilidh and films. Contact the Campaign Against Sea Dumping, Longacre Hall, London Road, Bath, 0761-33094.

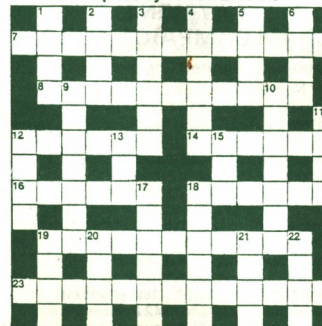
27th July - 2nd August: Ecology Party Summer Gathering, Worth Farm, Pilton near Glastonbury, Somerset. Contact Christine Crossingham, 11 Stanley Road, Bristol.

12-16th August: Provisional dates for Carnsore festival in Ireland.



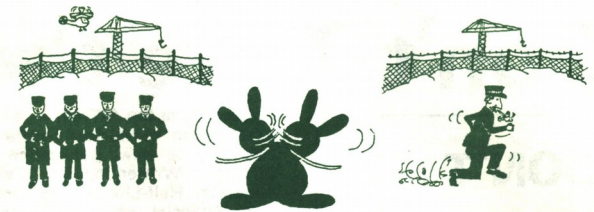
The Welsh Anti-Nuclear Alliance have produced some excellent badges, car stickers and posters. The nuclear free Wales badges and stickers are 25p each (15p for ten or more), and the posters are 10p each. This includes post and packaging on all items. Available from WANA, Hafren, Market Street, Lampeter, Dyfed.

ANTI-NUCLEAR CROSSWORD Compiled by T. Van Emerits



CLUES ACROSS

7. Atom scar racer distorted to produce a shut down. (5,1,7 words).
8. Until ace ran about we all agree with this sentiment. (11)



CUT THEM OFF!

Little Black Rabbit was burrowing through police finance files recently and found an outstanding debt for £150,000.00 due from the SSEB. Apparently the SSEB hired 800 police and a surveillance helicopter (through MacAlpines) to police the 100 or so demonstrators in May 1980.

They then refused to pay the bill although they had demanded this protection within their site. So this year the police refused to be SSEB-hired

lackeys and mounted their own operation — covering a much bigger demo with only 50 police. Little Black Rabbit overheard a high-up policeperson saying "We covered the same work as 800 stationary police by moving ours round a lot to confuse people."

Little Black Rabbit
XD

Opinion Poll

A recent opinion poll by the Welsh Energy Survey on behalf of the Welsh Anti-Nuclear Alliance (WANA) shows that the Welsh people are overwhelmingly opposed to the burial of nuclear waste in their country. 82% of the 4,790 adults interviewed in 29 Welsh towns said that they disapproved. On the question of the current government's policy of expanding the nuclear power programme, only 25% supported it. 58% said they were against it and 16% had not made up their minds.

WANA, Hafren, Market Street, Lampeter, Dyfed.

Advertisement

Forest Fire, 50 St. Marys Street, Edinburgh for advice on all types of wood and solid fuel fired cooking and heating. Tel: 031-556-9812.

Info. needed

Peace News have revealed that essential components in some nuclear power stations may have been 'bodge'd' during construction. It is alleged that construction workers have taken short-cuts in an essential post welding treatment known as "stress relief", and that records of the process have been forged to show full treatment.

Total failure of the welds under load could result. The welds are in the coolant systems of the reactors involved — and failure leading to a 'loss of coolant accident' could be extremely serious. It is impossible to check now whether the stress relief has been properly carried out on a weld — unless it is to be entirely removed and cut into thin slices.

Peace News is appealing to anyone who has information on the matter to come forward publicly — for the sakes of all our safety. Please contact Peace News, 8 Elm Avenue, Nottingham.

12. Sounds like the sea; bream confused on a slope. (6)
14. Robber in more average reactors? (6)
16. Safer 19 across! (6)
18. Go kiss man wrongly for early British reactor. (6)
19. Mistakenly fear bed-rest on the North coast of Scotland! (4,7)
23. State methane digester danger; few daub wrongly! (2,4,3,4)

CLUES DOWN

1. A West Coast weapons research laboratory initially destroys new-born infant's membrane. (4)
2. Killer-? (4)
3. We carry it with Sister Anna. (6)
4. He fights with cold steel and erects barriers against us! (6)
5. Area of land destroyed when hill disappears from reactor! (4)
6. There's no point in this reorganised route, or a radioactive release! (4)
9. RTZ illegally occupies and smashes main Independent Broadcasting Authority in this country? (7)

10. Dave involved with Anti-Nuclear Campaign, broken up but moves on pointlessly! (7)
11. Hopefully **not** the last to be built! (4)
12. The heart of our enemy. (4)
13. Music Company involved in nuclear weapons research programme. (3)
15. Approximate time to expect a Basque separatist organisation? (3)
17. Brutes cut up yield potatoes. (5)
18. A woman beside herself with frenzy, a follower of Bacchus. (6)
19. Medieval system, without bad publicity, reprocessed for use in reactors. (4)
20. Turpin's horse returns for this autocratic Scottish organisation! (4)
21. Nuclear Power has the same life expectancy as this flightless bird! (4)
22. The currency of Apartheid! (4)

The first correct answer that is pulled out of a hat on 1st August wins a free subscription to the SCRAM Energy Bulletin for one year.